



St. Croix International Waterway Commission



Final Report

Amended April 9, 2019

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Watershed – Anadromous Fish Counts at Milltown Dam Project 2018

International Joint Commission & International St. Croix River Watershed Board

Elizabeth Hyslop, Executive Director

director@stcroix.org

207-952-9069

Rebecca Goreham, Lead Biologist

rgoreham@stcroix.org

207-952-9088

PO Box 2, St. Stephen NB E3L 2W9
PO Box 610, Calais ME 04619

60 River Rd, St. Croix NBE6J 2A8
43 Union St, Calais ME 04619



St. Croix International Waterway Commission

PO Box 2, St. Stephen, NB E3L 2W9 and PO Box 610, Calais, ME 04619

Tel: (207) 952- 9069

Fax: (506) 466-7551

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Project Summary:

3-Year Project (2018, 2019, 2020)

This project will enumerate all anadromous fish entering the St. Croix River at the lowermost (Milltown) dam. The project forms the basis for measuring progress of current international efforts to restore sea-run alewife, blueback herring and American shad to the watershed, as well as plays an important role in supporting and validating recent alewife population dynamics models being developed to support alewife restoration planning.

Process:

The Milltown research trap is operated for an 8-12 week period each year to record the run of alewives (or gaspereau) and closely-related blueback herring, collectively called river herring. Other fish entering the trap are also documented.

The research trap and fishway were activated simultaneously on April 26, 2018 and the trap has been tended daily since. The trap was emptied each morning at 7am and fish were hand counted until the run exceeded 1000 fish recorded per hour; fish were then counted on ten-minute intervals each half hour during times of heavy run and the trap was closed each evening at 11PM. The first 2018 river herring ascended the fishway on May 9, within a week of the arrival of previous year's runs.

Weekly trap reports were issued Thursdays following the final trap check of 11 PM each Wednesday evening.

The project will provide these counts and other biological data to agencies, legislators, and involved parties to support evolving restoration plans.

Funding:

Projected Costs 2017-2018 - \$31,180 CAN
 2018-2019 - \$21,380 CAN
 2019-2020 - \$21,900 CAN

Additional Expense Repayment Request:

Fish Counter was purchased instead of borrowed from the Sipayik Environmental Department. The intent was used in conjunction with video counting and hand counting to establish the most effective way to conduct the counts.

Items	Details	Budgeted Cost (\$CND)	Actual Costs (\$CND)
Personnel	Program Administration/Management, Biologists, Technicians	\$18,880	\$15,973.95
Equipment	Maintenance/replacement/modification of equipment purchased in 2018, general parts/materials	\$1,600	\$5,087.08
Travel & Meetings	Meetings with US and Canadian agencies, Passamaquoddy Tribe (Sipayik Environmental Department), Peskotomuhkati Nation, etc....	\$500	\$32.48
General Office		\$400	\$286.49
Total		\$21,380	\$21,380.00

Names of potential partners	Annual Estimated In-Kind (non-monetary) Contributions – CDN or US \$*
Fisheries and Oceans Canada	\$1,300 CND – in-kind; operating approval, technical advice
US Fish and Wildlife Service	\$7,000 USD – in-kind; technical advice
Maine Dept. of Marine Resources	\$2,445 USD– in-kind; fish scale reading and interpretation, technical advice
Passamaquoddy Tribe - Sipayik Environmental Department / Peskotomuhkati Nation	\$500 USD – in-kind; tube counter and related equipment assistance with set-up, technical advice
NB Power	This one is a little harder to quantify in a dollar amount – in-kind; 24/7 site access, utilities, staff assistance, location for research building, use of tools/equipment



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2018 Activities & Deliverables:

Deliverables, Milestones & Timeline 2018	January-March 2018	April-July 2018	August-December 2018	January 2019
1: Finalize funding and agency approvals. Complete 2018 research design and protocols	X			
2: Operate trap, test new counting methods, conduct fish counts and research, issue regular fish count reports		April 23 - July 16, 2018		
3. Collect and compile data on environmental conditions during the 2018 fish counts		Technician collected EC & USGS data on water temperatures, pH levels, etc. and herring fish count 2017, as it relates to the utilization of NB Power Turbine 7.	Data to be summarized for the 2018 season.	Project Lead will complete in January 2019
4. Develop and share communications materials		Weekly Fish Count Reports		
5: Complete analyses and recommendations				TBA
6: Issue final public report			October 30, 2018	
7: Issue report outlining design and specifications of count methods used in 2018			December 31, 2018	Revised April 10, 2019

Constraints:

The purchased tube fish counter did not function properly and the fish counting process had to be done manually. The Executive Director resigned in August, resulted in a loss of human capital in the managing of the project and required reporting. Our Recreation Supervisor stepped up to fill in with the administrative duties, with the active support of our Commissioners and Liaisons.

Adaptations:

Going forward, we hope to install a Smith-Root counter in the Milltown fishway. Ideally, we plan on installing two Smith-Root counters, one atop the other, to best utilize the space available in the fishway. This provides the fish with extra passage and will hopefully prevent a bottleneck of fish trying to maneuver through the small space available to them. This will also require better communication with our partners involved in the fish count.

Lessons Learned:

In the future we need to reach out to experts in the field (i.e. installing and running an electronic fish counter properly). We also need to make sure equipment is ready and installed with ample time for testing and troubleshooting.

Next Steps:

The next steps to take for the 2019 fish count are to investigate the feasibility of installing the electronic fish counter. This involves consulting with people who are familiar with this technology. Our senior technician needs to be trained to use and maintain the electronic fish counter.

Fish Count Results:

Anadromous fish inbound to spawn in the St. Croix River have been counted at a research trap at the Milltown dam fishway since 1981. The SCIWC has been performing the fish count since 1991, with one interruption in 2012 - 2014. The dam is located at the head-of-tide on this international boundary water between Maine and New Brunswick and is owned by the New Brunswick Power Corporation (NB Power). The fishway and research trap are on the Canadian side of the river and are under the jurisdiction of Canada's Department of Fisheries & Oceans (DFO).

From 1981 to 2006 the counting facility was operated seasonally for up to seven months each year to document all inbound fish but notably Atlantic salmon (*Salmo salar*) and river herring (these being alewives or gaspereau (*Alosa pseudoharengus*) and blueback herring (*Alosa aestivalis*). Since 2007, a reduced operation in May-July has focused primarily on documenting the annual river herring run.



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In 2018 the St. Croix International Waterway Commission operated the Milltown research trap and collected relevant data under agreements and/ partnerships with DFO, NB Power, the U.S. Fish & Wildlife Service (USFWS), the International Joint Commission (IJC), the Atlantic Salmon Federation, Maine Department of Marine Resources (DMR), and the Sipayik Environmental Department.

The Milltown fishway and research trap were both activated on April 28, and all fish were counted until July 16, when the trap was lifted at the presumed end of the river herring run. The run is considered to end when there are three consecutive days with no fish in the fish trap. NB Power continues to operate the fishway until mid-November, as required by federal agreement, but with no fish count. All fish species captured in the trap are recorded in Table 1.

A total of 270,659 river herring were recorded at the Milltown trap in 2018, a large increase from the 157,750 recorded in 2017, and 33,016 river herring counted in 2016. The ten year average is 67,462 (2008 – 2018).

Six other freshwater species were also documented at the trap (See Table 1). No Atlantic salmon were recorded in 2017.

Milltown fishway operation and trap counts

In 2018 the Milltown fishway and research trap were both activated on April 28. During the start of the monitoring season, spring river flows exceeded 5000 cubic feet per second (cfs) and hit a peak of 9900 on May 7. Due to the configuration of the Milltown dam and fishway, river flows greater than 5000 cfs significantly limit attraction and effective operation of the fishway. River flows remained above 5000 cfs until May 14. During the first two weeks high water levels caused the lower portion of the fishway to be submerged and created a large amount of turbulence, preventing any fishway attraction.

All fish entering the research trap at the top of the Milltown fishway were individually hand netted and hand counted to ensure a complete record before they were released upstream, until the run increased to several thousand a day. (See Table 2a-b). When the number of fish reached 5000 or more a day the trap was left open and fish entering the trap were counted in 10 minute intervals. This was repeated every 30 minutes, and the total number of fish was extrapolated by multiplying the 10 minute count by 3.

The trap was checked, at minimum, every day at 0700 h, 1500 h, and 2300 h.

The hydroelectric turbine adjacent to the fishway alternated between being off and on to see if there was an effect with the turbine and fish passage. (See Table 3).

A Gas Infusion System (GIS) was installed into the fishway this year and began operation on May 9th. The goal of the GIS is to supersaturate the water with oxygen. The GIS system was run on alternating days. (See Table 4).

After the fisheries research trap was lifted on July 16, NB Power assumed operation of the fishway as specified by DFO, without fish counts, until mid-November.

River herring

Table 2 summarizes river herring returns to the St. Croix River from 1981 to 2018. The 2018 run of 270,659 river herring was the largest seen since 1996.

The first river herring was recorded in the trap on May 8. The first strong run (3,526 fish) was on May 10th. The fish run remained strong until mid-June, with the largest run taking place on May 29 when 25,199 fish were recorded in a single day.

Other species

Other fish captured in the Milltown trap during the course of the monitoring period are counted and immediately released upstream, unharmed, unless fisheries agencies specify their removal as exotics.

In 2018, six freshwater fish species were recorded in small numbers (See Table 1); these are all assumed to have passed over the dam spillway or through open gates and returned up the fish ladder after encountering brackish water.

American shad

255 American shad (*Alosa sapidissima*) were seen and recorded in 2018. On days in which the fish run exceeded 5000 fish the trap was left open and fish were counted in ten-minute intervals every half hour between 0700 h and 2300 h, with the total number of river herring extrapolated from these observations. Only shad that were seen passing through the fishway were counted, so it's assumed more than 255 shad passed through the fishway in 2018. There were fifty-six shad in 2017. No shad were recorded in 2016. In 2015 eleven shad were recorded in the fish trap after appearing in the St. Croix for the first time since 1999.

American eel

The St. Croix supports an active American eel (*Anguilla rostrata*) population and significant commercial fishery for juvenile eels on the Maine shore. No American eels were recorded in the trap in 2018.

Inbound juvenile eels (elvers) can pass through the research trap's 1-inch mesh unimpeded and are therefore rarely recorded.



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Atlantic salmon

Wild Atlantic salmon (*Salmo salar*) have not been recorded at the Milltown trap since 2006.

Additional studies

Fish health testing

Fish health testing was not conducted in 2018.

Scale aging

Ninety-eight river herring were sampled by SCIWC staff for the purpose of scale aging by Maine DMR. Most scales were taken from live samples. Of these, 41 were alewife and 57 were blueback herring. The overall average age of river herring was found to be 3.59 years, with females averaging 3.6 and males averaging 3.63. The average age of Alewife (*Alosa pseudoharengus*) was 3.83 years, with females averaging 3.90 years and males 3.79 years. Blueback (*A. aestivalis*) were found to have an average age of 3.42 years, with females being 3.38 years and males 3.79 years. The oldest fishes sampled were 5 years old and included both alewife and blueback.

Of the samples, the overall length of all fish was 224.54 mm. Alewife were an average of 240.90 mm, with females being 245.04 mm and males 237.16 mm. Blueback had an average length of 212.77 mm, with females being 216.34 mm and males 208.21 mm. Of the 98 fish sampled, 19 had spawned previously: 3 alewife (1 female, 2 male) and 16 blueback (7 female, 9 male). 79 fish spawned for the first time. The average age of fish that spawned for the first time was 3.39 years, and their average length was 224.25 mm. (See Table 4).

River herring tracking studies

In addition to the counting operation, Milltown fisheries staff supplied a sample of alewives for a tagging study to track spawners in the St. Croix watershed. The St. Croix International Waterway Commission, fisheries agencies, and the Sipayik Environmental Department collaborated on a St. Croix river herring tracking study. Approximately 700 fish were implanted with passive integrated transponder (PIT) tags. Fish were tagged on May 22, May 28, June 1, June 11, June 12, June 13, and June 19. These fish were all released below the fishway. These tags will be tracked by stationary receivers placed along the river and in Woodland and Grand Falls Flowages. Additional information will be available at a later date.

Automated Fish Counter

The automated fish counter was not installed this year.

Public information

The Milltown river herring count is issued weekly to individuals and organizations by email and phone.



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Acknowledgements

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The SCIWC would also like to acknowledge New Brunswick Power (NB Power), their staff at the Milltown Dam and the Department of Fisheries and Oceans (DFO) for their cooperation on this project; and United States Fish and Wildlife Service (USFWS) and Passamaquoddy Tribe - Sipayik Environmental Department for their continued willingness to provide equipment and technical advice; and the Maine's Department of Marine Resources (MDMR) for providing the lab services to conduct scale sampling.

For additional information, contact:

Elizabeth Hyslop, BBA, FCIP
Executive Director

St. Croix International Waterway Commission

PO Box 610, Calais, ME 04619

PO Box 2, St. Stephen NB E3L 2W9

Telephone: 207-952-9069

Email: director@stcroix.org

Web: www.stcroix.org



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Appendix

Table 1. Counts of inbound fish at the Milltown fishway research trap, St. Croix River

Species	2018 trap count May 8 to July 16, 2017
River herring: alewife (<i>Alosa pseudoharengus</i>) and blueback herring (<i>A. aestivalis</i>)	270,659
White sucker (<i>Catostomus commersonii</i>)	87
Smallmouth bass (<i>Micropterus dolomieu</i>)	23
Brook trout (<i>Salvelinus fontinalis</i>)	3
Common shiner (<i>Luxilus cornutus</i>)	1
American shad (<i>Alosa sapidissima</i>)	255
Fallfish (<i>Semotilus corporalis</i>)	2
Total	271,030

Table 2a. Daily Fish Counts at the Milltown fishway research trap, St. Croix River

Month	April Count	May Count	June Count	July Count	Total
1		-	11,228	58	11,286
2		-	11,155	134	11,289
3		-	9,365	11	9,376
4		-	2,197	29	2,226
5		-	1,997	65	2,062
6		-	880	5	885
7		-	7,897	11	7,908
8		4	3,220	1	3,225
9		1	6,126	-	6,127
10		3,526	2,676	-	6,202
11		1,652	3,836	4	5,492
12		2,622	1,579		4,201
13		2,178	3,958	5	6,141
14	-	530	726	-	1,256
15	-	753	718	-	1,471
16	-	1,767	1,896	-	3,663
17	-	1,638	2,334	-	3,972
18	-	1,495	424	-	1,919
19	-	14,055	346	-	14,401
20	-	9,140	1,360		10,500
21	-	7,300	360		7,660
22	-	7,184	267		7,451
23	-	2,448	175		2,623
24	-	23,730	214		23,944
25	-	22,716	229		22,945
26	-	12,869	793		13,662
27	-	24,358	125		24,483
28	-	13,501	420		13,921
29	-	25,199	123		25,322
30		8,165	46		8,211
31		6835			6,835
Totals	-	193,666	76,670	323	270,659



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Table 2b. Total Count by Week 1981- Present at the Milltown fishway research trap, St. Croix River (alewife/gaspereau/blueback herring spawning runs

Table 2b: 1981-1990

Sources: Fisheries & Oceans Canada (1981-1990), Atlantic Salmon Federation (2012-2014), St. Croix International Waterway Commission (1991-2011, 2015-present).

YEARS >>>	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990
Apr 14 - Apr 29	--	--	--	--	--	--	--	--	--	--
Apr 30 - May 2	--	0	0	0	0	5,460	0	0	0	0
May 3 - May 9	--	0	0	0	0	16,410	9,400	24,410	0	29,690
May 10 - May 16	7,510	32,160	16,970	6,000	0	75,150	171,500	468,750	0	305,370
May 17 - May 23	47,450	64,120	44,050	40,300	70,000	429,400	559,500	760,280	200,610	319,380
May 24 - May 30	47,770	74,800	33,760	67,100	149,890	772,800	674,700	764,990	464,390	411,090
May 31 - Jun 6	48,310	56,930	20,770	26,200	96,740	628,300	645,300	370,750	424,550	141,490
Jun 7 - Jun 13	16,000	4,610	35,650	13,300	26,900	57,200	480,400	187,800	63,940	132,030
Jun 14 - Jun 20	1,760	250	620	0	21,040	0	83,900	13,770	11,370	0
Jun 21 - Jun 27	790	210	0	0	1,060	0	0	0	0	0
Jun 28 - Jul 4	30	20	0	0	3,270	0	0	0	0	0
Jul 5 - Jul 11	0	1	130	0	0	0	0	0	0	0
Jul 12 - Jul 18	0	1	0	0	0	0	0	0	0	0
Jul 19 - Jul 25	0	0	2	0	0	0	0	0	0	0
Jul 26 - later	0	0	0	0	0	0	0	0	0	0
Escapement	169,620	233,102	151,952	152,900	368,900	1,984,720	2,624,700	2,590,750	1,164,860	1,339,050
Harvest	0	0	0	0	0	0	0	0	0	192,200
Total	169,620	233,102	151,952	152,900	368,900	1,984,720	2,624,700	2,590,750	1,164,860	1,531,250

Table 2b: 1991- 2000

YEARS >>>	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
Apr 14 - Apr 29	--	--	--	--	--	--	--	--	--	--
Apr 30 - May 2	0	0	0	0	0	0	0	0	0	0
May 3 - May 9	170	0	0	0	0	2,814	0	0	0	3,966
May 10 - May 16	14,740	8,910	0	0	5,898	11,178	0	77,394	195	142
May 17 - May 23	133,820	74,120	12,000	94,304	109,388	202,188	122,478	25,705	5,933	2,011
May 24 - May 30	154,560	45,520	146,600	99,150	99,847	188,538	93,000	71,534	13,615	377
May 31 - Jun 6	51,110	24,780	102,800	125,900	50,946	231,870	4,091	2,684	5,476	2,067
Jun 7 - Jun 13	4,010	50,420	2,260	15,400	0	9,390	5,951	0	108	6
Jun 14 - Jun 20	0	0	26,060	0	0	0	0	0	0	0
Jun 21 - Jun 27	0	0	0	0	0	0	0	0	0	0
Jun 28 - Jul 4	0	0	0	0	0	0	0	0	0	0
Jul 5 - Jul 11	0	0	0	0	0	0	0	0	0	0
Jul 12 - Jul 18	0	0	0	0	0	0	0	0	0	0
Jul 19 - Jul 25	0	0	0	0	0	0	0	0	0	0
Jul 26 - later	0	0	0	0	0	0	1	0	0	0
Escapement	358,410	203,750	289,720	334,754	266,079	645,978	225,521	177,317	25,327	8,569
Harvest	228,500	0	8,000	15,400	8,000	0	0	0	0	0
Total	586,910	203,750	297,720	350,154	274,079	645,978	225,521	177,317	25,327	8,569



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Table 2b: 2001- 2010

YEARS >>>	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Apr 14 - Apr 29	--	--	--	--	--	--	--	--	--	--
Apr 30 - May 2	0	0	0	0	0	0	--	--	--	--
May 3 - May 9	0	2	0	0	0	18	0	0	0	0
May 10 - May 16	160	6	3	0	0	577	0	4	1	9,748
May 17 - May 23	505	23	603	0	2	3,111	0	33	12	17,731
May 24 - May 30	2,625	325	2,115	0	20	3,155	2	119	3,740	17,008
May 31 - Jun 6	1,735	494	3,163	0	5,277	2,540	0	11,797	42	8,520
Jun 7 - Jun 13	123	35	999	951	6,220	1,096	1,225	61	2	4,700
Jun 14 - Jun 20	54	15	1,018	108	113	1,227	66	23	6,627	1,126
Jun 21 - Jun 27	0	0	0	79	0	105	1	221	26	255
Jun 28 - Jul 4	0	0	--	150	--	--	--	3	0	45
Jul 5 - Jul 11	0	0	--	11	--	--	--	--	--	9
Jul 12 - Jul 18	0	0	--	0	--	--	--	--	--	3
Jul 19 - Jul 25	0	0	--	0	--	--	--	--	--	--
Jul 26 - later	0	0	--	0	--	--	--	--	--	--
Escapement	5,202	900	7,901	1,299	11,632	11,829	1,294	12,261	10,450	59,145
Harvest	0	0	0	0	0	0	0	0	0	0
Total	5,202	900	7,901	1,299	11,632	11,829	1,294	12,261	10,450	59,145

Table 2b: 2010- 2018

YEARS >>>	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Apr 14 - Apr 29	--	--	--	--	--	0	--	0		
Apr 30 - May 2	--	--	--	--	0	0	0	0		
May 3 - May 9	0	993	342	0	0	0	0	5		
May 10 - May 16	1,657	343	362	7	16	125	369	13,028		
May 17 - May 23	13,053	22,260	178	16	126	269	29,946	43,260		
May 24 - May 30	1,227	11,190	10,542	29	32,637	14,304	44,110	130,538		
May 31 - Jun 6	7,750	1,175	5,107	19,971	16,875	12,781	42,406	43,657		
Jun 7 - Jun 13	1,387	197	37	6,775	27,150	3,038	27,681	29,292		
Jun 14 - Jun 20	50	10	83	95	11,871	2,000	8,790	7,804		
Jun 21 - Jun 27	10	0	23	143	3,817	471	3,787	2,163		
Jun 28 - Jul 4	7	--	3	267	816	27	571	821		
Jul 5 - Jul 11	1	--	--	9	161	1	69	86		
Jul 12 - Jul 18	--	--	--	--	34	--	21	5		
Jul 19 - Jul 25	--	--	--	--	--	--	0	0		
Jul 26 - later	--	--	--	--	--	--	--	--		
Escapement	25,142	36,168	16,677	27,312	93,503	33,016	157,750	270,659	0	0
Harvest	0	0	0	0	0	0	0	0	0	0
Total	25,142	36,168	16,677	27,312	93,503	33,016	157,750	270,659	0	0



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Table 3: GIS System: Turbine 7 and Oxygen Treatment

Date	O2	T7	Date	O2	T7
14-May	On	Off	14-Jun	Off	On
15-May	Off	Off	15-Jun	Off	On
16-May	On	On	16-Jun	On	Off
17-May	Off	On	17-Jun	Off	Off
18-May	Off	On	18-Jun	Off	On
19-May	Off	Off	19-Jun	On	Off
20-May	On	Off	20-Jun	Off	Off
21-May	On	On	21-Jun	Off	On
22-May	On	On	22-Jun	On	On
23-May	Off	On	23-Jun	On	On
24-May	Off	Off	24-Jun	On	On
25-May	On	Off	25-Jun	On	Off
26-May	Off	Off	26-Jun	On	Off
27-May	Off	On	27-Jun	On	On
28-May	On	On	28-Jun	On	Off
29-May	On	Off	29-Jun	On	On
30-May	Off	On	30-Jun	On	Off
31-May	On	On	1-Jul	Off	On
1-Jun	Off	Off	2-Jul	On	On
2-Jun	On	On	3-Jul	On	On
3-Jun	On	Off	4-Jul	Off	Off
4-Jun	On	Off	5-Jul	Off	On
5-Jun	Off	Off	6-Jul	On	On
6-Jun	Off	On	7-Jul	Off	Off
7-Jun	Off	Off	8-Jul	Off	On
8-Jun	Off	On	9-Jul	Off	Off
9-Jun	On	Off	10-Jul	Off	On
10-Jun	Off	On	11-Jul	On	On
11-Jun	Off	Off	12-Jul		
12-Jun	Off	On	13-Jul	On	Off
13-Jun	Off	Off	14-Jul	On	On



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Table 4: Scale Samples

River	Year	Species	Sex	Fork Length	Age	Repeat Spawn
St Croix	2018	Alewife	M	265	4	1
St Croix	2018	Alewife	F	257	4	
St Croix	2018	Alewife	M	244	4	
St Croix	2018	Alewife	M	276	5	
St Croix	2018	Alewife	M	256	5	1
St Croix	2018	Alewife	M	237	4	
St Croix	2018	Alewife	M	238	4	
St Croix	2018	Alewife	F	250	4	
St Croix	2018	Alewife	F	239	4	
St Croix	2018	Alewife	M	218	3	
St Croix	2018	Alewife	F	267	5	
St Croix	2018	Alewife	F	235	4	
St Croix	2018	Alewife	M	240	4	
St Croix	2018	Alewife	M	209	3	
St Croix	2018	Alewife	F	250	4	
St Croix	2018	Alewife	M	236	4	
St Croix	2018	Alewife	F	254	4	
St Croix	2018	Alewife	F	252	3	
St Croix	2018	Alewife	F	234	4	
St Croix	2018	Alewife	M	225	3	
St Croix	2018	Alewife	F	254	4	
St Croix	2018	Alewife	M	250	4	
St Croix	2018	Alewife	M	212	3	
St Croix	2018	Alewife	F	232	4	
St Croix	2018	Alewife	F	240	4	
St Croix	2018	Alewife	F	232	3	
St Croix	2018	Alewife	M	220	3	
St Croix	2018	Alewife	F	230	3	
St Croix	2018	Alewife	NA	225	3	
St Croix	2018	Alewife	F	255	4	
St Croix	2018	Alewife	M	240	4	
St Croix	2018	Alewife	M	220	3	
St Croix	2018	Alewife	F	240	4	
St Croix	2018	Alewife	M	230	4	
St Croix	2018	Alewife	F	265	4	
St Croix	2018	Alewife	M	240	4	
St Croix	2018	Alewife	F	250	4	
St Croix	2018	Alewife	F	215	3	
St Croix	2018	Alewife	F	235	4	
St Croix	2018	Alewife	F	260	5	1
St Croix	2018	Alewife	M	250	4	
St Croix	2018	Blueback	F	241	5	1
St Croix	2018	Blueback	M	226	5	1
St Croix	2018	Blueback	M	204	3	
St Croix	2018	Blueback	F	205	3	
St Croix	2018	Blueback	M	206	4	1
St Croix	2018	Blueback	M	216	5	2
St Croix	2018	Blueback	M	210	3	
St Croix	2018	Blueback	M	206	3	



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St Croix	2018	Blueback	F	230	5	1
St Croix	2018	Blueback	M	208	4	1
St Croix	2018	Blueback	F	210	3	
St Croix	2018	Blueback	NA	232	4	
St Croix	2018	Blueback	M	210	4	1
St Croix	2018	Blueback	F	211	3	
St Croix	2018	Blueback	M	203	3	
St Croix	2018	Blueback	M	214	3	
St Croix	2018	Blueback	F	227	3	
St Croix	2018	Blueback	F	235	4	
St Croix	2018	Blueback	M	210	3	
St Croix	2018	Blueback	F	220	3	
St Croix	2018	Blueback	F	220	3	
St Croix	2018	Blueback	F	210	3	
St Croix	2018	Blueback	M	215	3	
St Croix	2018	Blueback	F	205	4	1
St Croix	2018	Blueback	M	190	3	
St Croix	2018	Blueback	F	210	3	
St Croix	2018	Blueback	F	215	3	
St Croix	2018	Blueback	F	195	3	
St Croix	2018	Blueback	F	215	3	
St Croix	2018	Blueback	M	205	4	1
St Croix	2018	Blueback	F	210	3	
St Croix	2018	Blueback	M	195	3	
St Croix	2018	Blueback	M	210	3	
St Croix	2018	Blueback	M	205	3	
St Croix	2018	Blueback	F	230	4	1
St Croix	2018	Blueback	M	205	3	
St Croix	2018	Blueback	M	215	3	
St Croix	2018	Blueback	F	230	4	1
St Croix	2018	Blueback	F	210	3	
St Croix	2018	Blueback	M	190	3	
St Croix	2018	Blueback	F	220	3	
St Croix	2018	Blueback	F	220	5	2
St Croix	2018	Blueback	M	221	4	1
St Croix	2018	Blueback	F	225	4	1
St Croix	2018	Blueback	M	198	3	
St Croix	2018	Blueback	M	215	5	2
St Croix	2018	Blueback	F	220	3	
St Croix	2018	Blueback	F	210	3	
St Croix	2018	Blueback	M	220	4	1
St Croix	2018	Blueback	F	210	3	
St Croix	2018	Blueback	NA	210	3	
St Croix	2018	Blueback	NA	210	3	
St Croix	2018	Blueback	F	210	3	
St Croix	2018	Blueback	NA	205	3	
St Croix	2018	Blueback	F	210	3	
St Croix	2018	Blueback	F	205	3	
St Croix	2018	Blueback	F	215	3	



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Expense List

Vendor	Date	Description	Amount
McAdam Home & Building Centre	4/30/2018	Fish trap supplies	\$ 48.13
McAdam Home & Building Centre	5/1/2018	Fish trap supplies	\$ 15.95
McAdam Home & Building Centre	5/2/2018	Fish trap supplies	\$ 5.74
McAdam Home & Building Centre	5/2/2018	Fish trap supplies	\$ 32.55
McAdam Home & Building Centre	7/24/2018	Whiteboard supplies	\$ 140.28
McAdam Home & Building Centre	6/14/2018	Fish trap supplies	\$ 22.95
McAdam Home & Building Centre	6/8/2018	Fish trap supplies	\$ 52.89
McAdam Home & Building Centre	6/1/2018	Fish trap supplies	\$ 153.43
McAdam Home & Building Centre	5/9/2018	Supplies	\$ 55.17
McAdam Home & Building Centre	5/11/2018	Supplies	\$ 21.11
Heather Almeda	3/15/2018	Travel to site	\$ 29.68
Heather Almeda	1/24/2018	Travel to St. Andrews	\$ 2.80
Stationery Plus Ltd.	4/27/2018	Office supplies – 32374	\$ 88.39
Stationery Plus Ltd.	12-Jun-18	Office Supplies – 34437	\$ 89.88
Stationery Plus Ltd.	6-Sep-18	Office Supplies - Invoice 38563	\$ 31.94
Smith-Root	4/13/2018	Counter Fish SR 1601	\$ 4,615.16
Payroll #9	5-May-18	Payroll	\$ 664.00
Payroll #10	19-May-18	Payroll	\$ 1,366.96
Payroll #11	2-Jun-18	Payroll	\$ 2,196.64
Payroll #12	6/16/2018	Payroll	\$ 2,024.43
Payroll #13	6/30/2018	Payroll	\$ 1,144.66
Payroll #14	7/14/2018	Payroll	\$ 1,141.71
Payroll #15	7/28/2018	Payroll	\$ 1,080.00
Payroll #16	8/11/2018	Payroll	\$ 779.44
Payroll #17	8/25/2018	Payroll	\$ 779.44
Payroll #18	9/8/2018	Payroll	\$ 610.86
Payroll #19	9/22/2018	Payroll	\$ 212.56
Payroll #20	10/6/2018	Payroll	\$ 212.56
Payroll #21	10/20/2018	Payroll	\$ 344.40
Payroll #22	11/3/2018	Payroll	\$ 1,692.53
Payroll #23	11/17/2018	Payroll	\$ -
Payroll #24	12/1/2018	Payroll	\$ 861.88
Payroll #25	12/15/2018	Payroll	\$ 861.88
Payroll #26	1/3/2019	Payroll	\$ -
			\$ 21,380.00